Farm and Garden.

Inquiries or communications in relation to agricultural subjects may be addressed to DR. T. H. HOSKINS, Newport, or to A. MESSER, Rochester, Vt.

Editorial Notings.

FREE TUITION.—Professor Scott of the New Hampshire Agricultural College, Hanover, N. H., writes to us as follows: "I notice the article in your paper called out by the questions of the young man, etc. I wish to inform him that the course which we offer is worth considering. In case he finds it satisfactory, we can give it to him without any charge for tuition."

FORESTRY.—The Report of the Michigan Forestry Commission for 1888 is received. The directors of the commission, Professor J. W. Beal and Hon. Charles W. Garfield, stand high, the country over, for general ability, as well as for knowledge in this specialty; and their report is of a highly practical character. Michigan has great and valuable forests, and has begun none too soon to attend to their preservation and to investigate the subject with reference to all parts of the state. The report is illustrated with photogravures of the leading timber trees of the state as they stand in the forest, etc.

PROFIT OF TRUCK FARMING.—"The investment of $10,000 in truck farming will give a yearly net profit of $4,000" is a statement of Mr. Rawson of Arlington, Mass., who has had abundant experience; but we notice that another man near by, in the same business, kicks at the statement and intimates that Mr. Rawson knows better. Our own experience, without the advantage of a large city close by, or the large amount of glass used by Mr. Rawson, would yet not lead us to dispute his statement. The trouble with many truckers is that they never have had the capital (and perhaps not the skill) to do the business to the best advantage. It is a business that requires the cash, and considerable of it, to make it pay well.

SALTPETER AS AN INSECTICIDE.—Saltpeter is an excellent fertilizer, being a combination of nitric acid and potash, but is rather too expensive to use for that purpose on a large scale. It has been quite often recommended as destructive to insects, and J. H. Curtis, in the *Homestead*, says: "A table-spoonful of saltpeter dissolved in a pail of water, and enough poured around a plant to wet the ground where cut-worms are sure to be at work, will cause the worm to stay in his hole for the season." This, if effective, is cheap enough. Another writer in the same paper advises a saltpeter solution of exactly the same strength, in *warm* water, to kill cabbage-worms, giving he plants a good sprinkling. This, he says, will rarely have to be repeated more than once. A correspondent in another paper repeats the recipe, and calls it "as perfect a remedy as could be desired." He applied it with a whisk broom.

TESTING TILLAGE IMPLEMENTS.—Professor J. W. Sanborn of the Missouri Agricultural College and Experiment Station gives, in a recent Bulletin, a report of a series of tests to show the draft and efficiency of a number of tillage implements, of which those of the Acme, Randall and Spring-tooth harrows may interest our readers. The Acme showed twenty and one-half per cent of the total draft of seven machines when run on unplowed corn ground, while on plowed corn ground it required but 14.53 per cent, with splendid relative pulverization. On timothy sod its pulverization was less than three other machines, yet its average for all soils was the greatest. Regarding depth of tillage, the Randall was a long way the leader. The other machines drew easier per pound of earth moved, but at a great sacrifice of depth. For depth the Randall is far the best, but for surface work the Acme leaves the ground in the best shape. The sod land was badly littered with sods where the Spring-toothed harrow was used. This harrow is of light draft, and goes deeper than Acme, but is exceeded in depth twenty-five per cent by the Randall. The Smoothing-harrow (Thomas) tills shallow, and compacts the soil. Professor Sanborn concludes that no one harrow is sufficient for the best tilth of a farm; that harrows till shallower than is generally supposed; that as a substitute for plows they do not economize force; that all but the Acme leave the bottom very uneven; that one harrow may break the clods best, but not leave so much fine soil as another; and finally, that each harrow tried had a place to which it is best adapted, but for a general-purpose harrow on a heavy soil—depth of cut, looseness of soil, ease of draft and pulverization being considered the leading demand of a harrow—the Randall, on the whole, proved the most satisfactory, although having the weakness of forming a bad bottom and of ridging the land.

CLOVER FOR PROFIT.—There are a good many things that the "average farmer" can not be persuaded to give a fair trial. In fact this is very generally the case with any crop that more than the common amount of pains must be taken with. And yet it is often in these things that are not very easy to do that there is the best chance for profit in. Clover-growing has been urged upon farmers for years in New England. In Central New York it is almost the foundation of their farming, but badly as many New England farms need renovating, the farmers on them are few and far between who have ever given clover a fair trial for that purpose. A writer in the *Rural New-Yorker* says: "I can't say too much in favor of red clover as a natural fertilizer. It makes the best hay for cattle and sheep and the best of pasture; it improves the land, and you can plow under the second crop, and thus get the cheapest and best of manure. I don't see any sense in this talk about poor soil at the East. Fertilizers are cheap enough to enable any farmer to get a good catch of clover on the poorest soil. Let me get a good stand of clover and I can make over any soil." Now if one man can do that, why not another? Why not all of us? The late Noah Safford of White River Junction (many years treasurer of the Vermont State Agricultural Society) was the only man we ever knew who gave clover a thorough trial as a soil renovator, and he made a perfect success of it. He said to us that he had tried to get other farmers to go into it, and they would sow the clover; but when they saw the crop they had to cut it, because they hadn't the courage to plow it in. But lately it has been taught that it is better to cut the first crop, and plow down the second, as in this way a much better growth of roots is obtained. Can't some of our younger readers give this a good fair trial? We haven't had the chance to do it to any great extent on our small home place, though it did well on a small scale; but we shall try it on our new farm. The best fertilizer for clover is unleached ashes—say ten barrels to the acre.

Caught the Woodchuck.

Though not quite "out of meat," we like to do a little trapping occasionally. Our highly-esteemed contemporary, the versatile and slightly bumptious *Homestead*, has several times reprinted matter written by us for this and other journals, and has credited it to us individually, by placing our name after a bracket, thus: [T. H. Hoskins, M.D., which is its usual method with articles directly contributed to its own columns—that is, it made no distinction between the borrowed and the purchased matter in its method of printing. Believing that sauce for the goose is a good enough sauce for the gander, we have two or three times done the same way with short contributions in the *Homestead*, written by Vermonters who have long been our personal friends and contributors to this paper. And the *Homestead* drops neatly into the trap, as follows:

SPRINGFIELD, Mass., Jan. 30, 1889.

Editors Watchman:—Your issue of recent date contains an article on the feeding of cotton-seed meal, by Mr. A. D. Arms. Mr. Arms probably would not send the identical article to both the *Watchman* and *Homestead*, and as it appeared in our columns first, we naturally infer that it was taken from us, although no credit whatever was given. We are constrained to ask that you do us the justice hereafter, when using what we print, to say that it is taken from our columns. Respectfully,

THE EDITOR.

As we have often remarked, the *Homestead* is smart. It is also successful, and it ought to be fair. That it is not fair in this is clear; and that it is not fair in other things seems to be shown by the following, which we take from a late issue of the *New England Farmer*:

The *Homestead* reports the annual meeting of the Bay State Agricultural Society in a way to convey a wrong impression. One quarter of its report, aside from the list of officers, is devoted to a report of the criticisms of the business management, as if that were the principal feature of the meeting, when really it occupied only a very small proportion of the time and that near the end, just as the meeting was about ready to adjourn. Further than this, our contemporary mentions the treasurer's report in connection with this portion of the meeting, alludes to it as "unsatisfactory," and says, "it was voted not to accept the treasurer's report." The treasurer's report was received almost the first thing in the morning. It presented a carefully classified exhibit of the disbursement of the society, and was received without a word of dissent. The treasurer stated that he had kept the accounts open so long, in order to have as many as possible settled, that there had been no time to have them audited, and at his own suggestion his report was referred to the auditors.

The Hay Crop for Twenty-Four Years.

That they have got a live man at the head of the New York Experiment Station, one who "makes things purr," in the person of our old friend, Professor Collier, is evident by the amount of laborious investigation of a practical character contained in the reports issued. He has recently completed the grain and hay statistics of the United States for the twenty-four years from 1863 to 1886. Reviewing these tables, he says:

"The first interesting fact which arrests our attention is that the average

[SEE FOURTH COLUMN.]

acreage value of the hay crop for the entire period of twenty-four years has exceeded the average acreage value of the cereal crop nearly eleven per cent, the hay crop averaging $14.62 and the cereal crop $13.30. Moreover, during the last half of this period the hay crop has relatively increased in value, having averaged for the past twelve years nearly twelve and one-half per cent higher in average acreage value than the cereal crops, the exact values for these last twelve years being $10.35 for the average acreage value of the cereals and $11.63 for the hay crop. During the first period of twelve years the average prices were, for the cereals, $16.25, and for the hay, $17.61. In fact it will be seen that during the past twenty years there have been but three years—'77, '79 and '82—when the average acreage value of the hay crop did not exceed the average value of the cereal crop, and during these three years the cereals upon an average only exceeded the hay crop in acreage value less than two per cent.

"The second interesting fact which this table discloses is that while during the past twenty-four years there has been an enormous increase in the total acreage of both the cereal and the hay crop, there has been a relative falling off in the average in hay. During the entire period the acreage in hay averaged twenty-eight per cent of that in cereals, but during the first period of twelve years it averaged thirty-one and seven-tenths per cent, while during the past twelve years it has averaged only twenty-four and three-tenths per cent, a relative falling off of twenty-three and four-tenths per cent. It is, however, gratifying to observe that of late years, since 1880, there has been a relative increase in the acreage of the hay crop as compared with that of the cereals, although it falls far short of what it should be, or of what it was during the first six years of the period comprised in the tables given.

"The third interesting fact which the table discloses is that although the relative acreage of hay has fallen off during the last period of twelve years, its average relative value has been so enhanced during this same period that it has almost maintained its percentage of total value as compared with the total value of the cereal crop. During the entire period of twenty-four years the total value of the hay crop has been thirty-one per cent of the total value of the cereal crop. During the first twelve years of this period it was thirty-four and seven-tenths per cent, and during the last half of the period it was twenty-seven and three-tenths per cent of the total value of the cereal crops."

New Method of Water-Heating.

Mr. Editor:—Having noticed your requests for readers to give their experience on the subject of *warming water for stock*, I will relate mine. Two years ago last fall I put seventy-five to eighty feet of three-fourths inch iron water-pipe into my kitchen chimney, it being in twelve-feet lengths, running up and down the chimney, connected with returns, and a three-fourths inch pipe where it goes in and comes out, beside the stove-pipe, the water being conducted to it in common lead pipe. The distance from where it goes into the ground to the barn trough is about four rods, and the pipe is enclosed in a wood tube, two inches square inside, made of four-inch boards, and two by two inch joist. It comes up to the trough, and is banked up outside of that after it is out of the ground; the trough is also well protected from the cold by being banked around it, *with an air space next to it*, which, according to my experience, is *necessary*. It will be no better than if it was not banked at all unless there is a space left next to the trough. This arrangement warms the water so it is quite warm to the touch and steams away considerable on a cold morning. The thermometer indicates the temperature at about fifty degrees in the morning and sixty to eighty degrees at night, depending somewhat on the amount of fire kept in the house. I had the stove-pipe from the sitting-room turned around so as to go into the kitchen chimney to keep it warmer nights. I did not have it so last winter, and it froze up in the chimney several times, but did no damage. As soon as the fire was built it went all right. We have a faucet at the stove reservoir and at the sink, where it is quite handy, as it is warm enough to wash with, and sometimes too warm. My cows will step up to the trough as though they liked to, and drink and look refreshed, instead of standing all fours in one track and shivering. Horses seem to like it warm too. The only trouble is they don't like to drink cold water on the road or away from home. Hay-seed or oats which drop into the trough sprouts and grows and green grass grows where the trough runs over. The only trouble attending it is it makes creosote run down the chimney, which is somewhat inclined; but I think there would be no trouble with a straight chimney which went down below the floors. The chimney wants to be large enough so the pipes will not clog it up. I think mine is eight by twelve inches inside. The cost of the pipes, all put together ready to put down into the chimney, was seven or eight dollars. I experimented considerably before I fixed it as it now is. I put lead pipe into the chimney, and melted it out once, put lead pipe into the stove reservoir, etc., but as I now have it I think it the cheapest, best and the least bother of any way I know of for warming water for stock.

I would like to know what to do for sore teats in cows. Some of my cows have sore teats right along and persist in being uneasy while being milked. If you think this worth printing I will give you some of my experience and ideas on ensilage, mainly the expense of harvesting, cutting, filling silo, how I do it at a small expense, etc.

PELEG SIMONDS.

Will some reader give Mr. Simonds aid in regard to the treatment of sore teats? We shall be glad to hear about the ensilage.—EDITOR.

Notes by the Way.

THE dairyman needs to test each cow separately, both for quantity and quality, and to have the nerve to dispose of the non-paying ones, while building on those which turn him a profit.

THE profits of dairying are made up of the small daily savings of the difference between the cost of production and value of the milk or butter. A saving of ten cents per day in a herd of fifty cows amounts to $5; in a month, to $150.

TO break young horses from chewing harness or anything that happens to be near them, soak some old straps with a strong tea made of Cayenne pepper and hang them within easy reach of the youngsters. This is generally effective.

KEEP the plow bright and especially the harrow, and manure as well as possible. But if you lack for manure use the plow and harrow more. We must get our bread and butter by farming, and let us make our mind up to that fact and go for it.

PUT the wood ashes under cover and do not add them to the manure heap. Save them carefully and keep them dry, so as to apply them broadcast in the orchard early in the spring. They are excellent for strawberries and all small fruits, as well as fruit trees.

A WISCONSIN dairyman at a farmers' institute said recently: "The dairy product of the state is about 45,000,000 pounds a year, and only one-fourth of it is of the best quality. Over $3,000,000 a year is lost to the farmers of the state by not making first-class butter.

WHEN a horse will not thrive on ordinary food it shows it has a poor digestion, or it may be fed too much. Give such a horse wheat bran, linseed meal, ground barley and oats, with cut hay. It should have carrots once a day. First see if its teeth are all right.

A TEA-SPOONFUL of guano added to two gallons of water, and the mixture used for sprinkling potted plants, will keep them in good condition during the winter. The pots should have good drainage below and should be placed where the frost can not injure the plants.

DUTCH-BELTED cattle are above the average cow in size, ranging from eight to twelve hundred weight, the bulls sometimes touching a ton. For beef they rank with the best and they have vigorous constitutions. As large and persistent milkers, they are remarkable, but the milk is not extra.

THE Wapping, Conn., creamery has 100 patrons, furnishing the milk from 900 cows. The average net price paid to patrons for 1884 was 27.5 cents per pound for butter; for 1885, 25.57 cents per pound; for 1886, 25.53 cents per pound; for 1887, 25.83 cents per pound; for 1888, 25.80 cents per pound.

THE price of flax-meal is regulated by the foreign demand for it. There is not enough home demand to consume it, although the home demand is growing. It is bought by British farmers to finish their cattle with, feed young calves and the like. We really should not permit them to get a pound of it.

TO make winter dairying profitable, cows must have good warm quarters to keep them comfortable in cold weather and be kept out of the storms. The old way of having them run out in the barn-yard with no shelter but an open shed, which only a few of the master cows would go under, will not answer.

THE pigs should never be raised in a small, close pen—they may be started there in the spring and finished off during the last six weeks of their life in comfortable pens, but the summer months should be spent in the open fields, among the clover and the grasses. Skim-milk and bran are much better foods than corn.

"COWS have to be wintered whether they give milk or not, and when they receive a meal ration twice a day they will not eat more than half a ration of hay or fodder, and consequently they must not be charged with the full cost of the meal, unless they receive credit for the lessened consumption of fodder," says the sensible *New England Farmer*.

BONE-MEAL and potash in some form, especially in muriate or kainit, are staple fertilizers for all the small fruits. The muriate can be applied in the fall with advantage, and bone-meal also, if somewhat coarse. The application of a very fine bone-flour had better be put off until early spring. Ashes are better than kainit for this use, where they can be had.

IF neighbors would agree upon a combination for each one to use and mark the chickens, turkeys and water-fowl unpleasant disputes as to ownership might often be avoided. Changing the marks each year would also aid in weeding out the old fowls at the close of the season. It would also be an aid in detecting chicken thieves to have the poultry thus marked.

LAST year was not the first in which the frost caught the corn early. A correspondent of the *Maine Farmer* says: "My father in 1817 went to Ohio on horseback. He saw the corn in the Mohawk valley killed with frost early in September, while the corn in Maine was made a good crop, so he concluded to stick to Kennebec, and he never failed of a crop of corn.

AT the recent meeting of the Massachusetts Board of Agriculture Secretary Batchelder of the New Hampshire State Board of Agriculture attempted to show that butter could be made at a profit of twenty-two and one-half cents a pound. He gave the cost of keeping a cow a year at his East Andover farm as $52, and the returns $60.62, calling butter worth twenty-two and one-half cents and skim-milk one-half cent per quart. As a fact, he got twenty-eight cents for his butter.